

Glossary

THE DYNAMIC EARTH

A

asthenosphere the solid, plastic layer of the mantle beneath the lithosphere; made of mantle rock that flows very slowly, which allows tectonic plates to move on top of it

atmosphere a mixture of gases that surrounds a planet, such as Earth

B

biosphere the part of Earth where life exists

C

closed system a system that cannot exchange matter or energy with its surroundings

condensation the change of state from a gas to a liquid

conduction the transfer of energy as heat through a material

convection the movement of matter due to differences in density that are caused by temperature variations; can result in the transfer of energy as heat

core the central part of the Earth below the mantle; also the center of the sun

crust the thin and solid outermost layer of the Earth above the mantle

E

erosion a process in which the materials of the Earth's surface are loosened, dissolved, or worn away and transported from one place to another by a natural agent, such as wind, water, ice, or gravity

evaporation the change of a substance from a liquid to a gas

F

fresh water water that contains insignificant amounts of salts, as in rivers and lakes

G

geosphere the mostly solid, rocky part of the Earth; extends from the center of the core to the surface of the crust

greenhouse effect the warming of the surface and lower atmosphere of Earth that occurs when carbon dioxide, water vapor, and other gases in the air absorb and reradiate infrared radiation

L

lithosphere the solid, outer layer of the Earth that consists of the crust and the rigid upper part of the mantle

M

mantle in Earth science, the layer of rock between the Earth's crust and core

O

open system a system that can exchange both matter and energy with its surroundings

ozone a gas molecule that is made up of three oxygen atoms

P

precipitation any form of water that falls to the Earth's surface from the clouds; includes rain, snow, sleet, and hail

R

radiation the energy that is transferred as electromagnetic waves, such as visible light and infrared waves

S

salinity a measure of the amount of dissolved salts in a given amount of liquid

stratosphere the layer of the atmosphere, that lies immediately above the troposphere and extends from about 10 to 50 km above the Earth's surface, in which temperature increases as altitude increases; contains the ozone layer

T

tectonic plate a block of lithosphere that consists of the crust and the rigid, outermost part of the mantle; also called lithospheric plate

troposphere the lowest layer of the atmosphere, in which temperature drops at a constant rate as altitude increases; the part of the atmosphere where weather conditions exist

W

water cycle the continuous movement of water from the ocean to the atmosphere to the land and back to the ocean